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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,455	02/10/2005	Eberhard Perplies	2002DE430	8656
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Klaus Schweitzer ProPat 425 C South Sharon Amity Road Charlotte, NC 28211				
			EXAMINER	
			BLAND, LAYLA D	
			ART UNIT	PAPER NUMBER
			1623	
			MAIL DATE	DELIVERY MODE
			08/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,455

Applicant(s)

PERPLIES ET AL.

Examiner

Layla Bland

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 10 February 2005.

2a) ☐ This action is FINAL.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-9 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)

Paper No(s)/Mail Date 2/10/2005.

4) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

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DETAILED ACTION

This application is a national stage entry of PCT/EP03/09150, filed August 19, 2003, and claims priority to German Application No. 102 39 442.3, filed August 28, 2002. Claims 1-9 are pending in this application and are examined on the merits herein.

Claim Objections

Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2 is drawn to the method of claim 1, wherein the acid groups and the aldehyde groups of the chemical compounds are reacted with the OH groups of the cellulose ethers to form an ester or hemiacetal bond. This limitation is already present in claim 1.

Claim 6 is objected to because of the following informalities: "are selected from" appears twice in the claim. It is assumed that the first occurrence of "are selected from" is not supposed to be in the claim. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention. Claim 3 recites the limitation "oxyalkyl radical," but the term is not defined by the claim or the specification, rendering the claim indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Block (US 4,366,070, December 28, 1982, PTO-1449 submitted February 10, 2005).

Block teaches a method for the formation of cross-linked hydroxyethyl cellulose. Glyoxal was added with stirring to hydroxyethyl cellulose and the system was heated to 60°-70°C for 30 minutes with stirring [column 9, Example 1]. The hydroxyalkyl cellulose can be hydroxymethyl, hydroxyethyl, hydroxyl-n-propyl or hydroxyisopropyl cellulose [column 5, lines 9-13]. Suitable aldehydes include glyoxylic acid (a synonym for glyoxylic acid; a compound having an acid group and an aldehyde group which meets the limitations of claim 3) [column 5, line 33]. The cross-linked hydroxyalkyl cellulose can be formed by reacting a hydroxyalkyl cellulose with at least about 1 percent of stoichiometry of the cross-linking reagent [column 5, lines 56-59].

Block does not teach a process wherein 0.01-0.1 mole of crosslinking agent per mole of cellulose ether is employed. Block is silent on mixing time and temperature and

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does not exemplify the reaction using a compound having an aldehyde group and an acid group.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize reaction conditions such as stoichiometry, time and temperature for the crosslinking reaction with glyoxylic acid. The skilled artisan would have been motivated to do so with an expectation of success because Block has provided guidance in the form of an example using glyoxal and Block specifically states that glyoxylic acid can be used in the method. It is noted that while Block is silent on the temperature of the solution while mixing, one of ordinary skill in the art would understand that in the absence of a recited temperature, room temperature is implied.

Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herron et al. (EP 0 252 649 A2, January 13, 1988, PTO-1449 submitted February 10, 2005).

Herron teaches a method for the preparation of cross-linked cellulose wherein varying amounts of glutaraldehyde are soaked in an aqueous slurry with wood pulp for 20 minutes. After dewatering and drying, the fibers were cured at 145°C for 45 minutes to give the crosslinked product. [page 15, Example 1] Table 1 demonstrates the amount of glutaraldehyde which reacted compared to the amount which was added [page 16]. The crosslinking agent is preferably an aldehyde or a dialdehyde acid analogue containing at least one aldehyde group [page 3, lines 44-46]. Particular crosslinking agents contemplated for use include glyoxylic acid [page 4, lines 31-32].

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Herron et al. do not teach a crosslinking reaction employing 0.01-0.1% of crosslinking agent per mole of cellulose ether. Herron et al. do not exemplify reaction using a compound having an aldehyde group and an acid group.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize reaction conditions such as stoichiometry and time for the crosslinking reaction with glyoxylic acid. The skilled artisan would have been motivated to do so with an expectation of success because Herron et al. have provided guidance in the form of an example using glutaraldehyde and Herron et al. specifically state that glyoxylic acid can be used in the method. Furthermore, Herron et al. provide a table which would assist one of ordinary skill in the art in optimizing the stoichiometry of the reaction. It is noted that while Herron et al. are silent on the temperature of the solution while mixing, one of ordinary skill in the art would understand that in the absence of a recited temperature, room temperature is implied.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976). In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a). From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the

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claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Layla Bland whose telephone number is (571) 272-9572. The examiner can normally be reached on M-R 8:00AM-5:00PM UST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia Anna Jiang can be reached on (571) 272-0267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


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Patent Examiner
Art Unit 1623
July 17, 2007

Shaojia Anna Jiang


Supervisory Patent Examiner
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July 17, 2007